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ENVIRONMENT

The increasing global population and the rapid growth of the world economy have complex and diverse connections with the global environment. They also affect the environment in numerous ways. It is essential to protect the world's irreplaceable natural capital—biodiversity and the air, water and soil that sustain it—for future generations. To balance economic growth with environmental preservation, the automotive industry is tackling a range of sustainability issues. These include climate change and energy measures, preservation of air quality and other natural capital, efficient use of mineral resources, management of chemical substances, waste reduction, recycling and health issues. Companies in the industry are also reforming their business structures to move away from dependence on fossil fuels.

As a global automaker, Nissan takes active steps to identify the direct and indirect environmental effects of its activities, as well as those of its business partners throughout the value chain. The company pursues needed technologies and processes to help minimize the impact of its products on people and communities throughout their lifecycle, while also engaging in communication with society. The company provides customers with innovative products and promotes effective use of energy and resources by increasing sourcing diversity, such as with renewable energy and recycled materials. In this way, Nissan is aiming to achieve its environmental philosophy of “a Symbiosis of People, Vehicles and Nature.”

NISSAN'S ACTIONS

Improvement in corporate average fuel efficiency (avg. in Japan, U.S., Europe and China, 2016; compared to 2005):

35%

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ENVIRONMENT

SCORECARD FY2015 TARGET ACHIEVEMENT RATE: ✓✓ ACHIEVED ✓ MOSTLY ACHIEVED ✗ NOT ACHIEVED

Nissan makes year-round use of the CSR scorecard as a fundamental tool to manage, review and validate its progress in each of the sustainability strategies defined for its CSR activities. The table below shows some of the values behind Nissan's ongoing activities and the indices used in the scorecard to gauge the company's performance.

Nissan Priorities	Nissan Objectives	Indicators of Progress	FY2014 Results	FY2015 Results	Assessment	Action Planned for Next Year Onward	Long-Term Vision
Zero-emission vehicle penetration	Introduce four EVs including Nissan LEAF	Number of models introduced	Launched e-NV200, the second EV model; launched the Venucia e30 for the Chinese market	Development underway	✓✓	Continue development	
	Prepare to introduce fuel-cell electric vehicle (FCEV) into market	Results of initiatives	Development underway	Development underway	✓✓	Continue development	
	Take global leadership in supplying batteries for electric-drive	Results of initiatives	Some processes for battery production started by Nissan Motor Iberica (Spain) and Dongfeng Motor Company Ltd. (China)	Start 30kWh Battery Production	✓✓	Undertake continuous production of batteries for EVs sold	
	Help create zero-emission society utilizing EVs and their derivative technologies with partners	Results of initiatives	End of the Yokohama Smart City Project, which achieved 25% CO ₂ reductions through solar power, Vehicle to Home and EVs	Signed of Yokosuka EV Creation Project in 2015 for further adoption of EVs	✓✓	Continue promoting commercialization of Vehicle to Home and EVs with partners	
	Provide energy storage solution with used EV batteries through "4R" business	Results of initiatives	Began testing of high-capacity energy storage system built with used Nissan LEAF batteries in Osaka's Konohana Ward	In July 2015, the Nissan Advanced Technology Center (NATC) adopted an energy management system built from 24 used Nissan LEAF batteries	✓✓	Continue preparing for further expansion of reuse business	
Fuel-efficient vehicle expansion	Improve CAFE* by 35% from FY2005 (Japan, U.S., Europe, China) * Corporate average fuel economy; meet or exceed regulatory requirements	CAFE	Improved by 35.3%	Improved by 35.7%	—	Continue promoting expansion of fuel-efficient vehicles	Achieve 90% reduction in CO ₂ emissions from new vehicles by 2050 (vs. 2000)
	Introduce top fuel-efficiency models in various classes	Model introductions	X-Trail (Europe) Murano (U.S.)	Maxima (U.S.) Lannia (China) NP300 Navara/Frontier (Europe) X-Trail HEV(Japan)	✓✓	Continue development	
	Introduce front-wheel-drive hybrid vehicles (HEVs) in C class and above; expand rear-wheel-drive HEV offerings	Model introductions	Development underway	X-Trail (Japan)	✓✓	Continue development	
	Promote plug-in hybrid vehicle (P-HEV) development	Model introductions	Development underway	Development underway	✓✓	Continue development	
	Introduce next-generation CVT globally; expand CVT sales to 20 million cumulative units from 1992	Number of CVT-equipped vehicle sales	Annual total: 2.95 million Cumulative total: 19.10 million	Annual total: 2.87million Cumulative total: 21.97million	✓✓	Expand penetration of CVT-equipped vehicles	
	Develop lightweight technologies with structure optimization, new materials and new manufacturing processes	Results of initiatives	Increased use of 1.2 gigapascal (GPa) Ultra High Tensile Strength Steel with High Formability in the new Murano, launched in North America, reducing total weight by 66 kg	37kg of weight reduction for MAXIMA by increased adoption of High Tensile Strength Steel Sheets (Ultra High Tensile Strength Steel) while 25% increase body rigidity	✓✓	Continue development	
	Contribute to CO ₂ reduction with ITS technologies	Results of initiatives	Promoted widespread adoption	Traffic information service expand to major cities in China	✓✓	Promote widespread adoption	

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Nissan Priorities	Nissan Objectives	Indicators of Progress	FY2014 Results	FY2015 Results	Assessment	Action Planned for Next Year Onward	Long-Term Vision
Corporate carbon footprint minimization	Reduce CO ₂ emissions of global corporate activities by 20% (t-CO ₂ /vehicle, vs. FY2005)	CO ₂ emission reduction rate	Reduced by 23.0%	Reduced by 22.4%	✓✓	Expand Nissan Energy Saving Collaboration (NESCO) diagnoses worldwide	Achieve 80% reduction by 2050 (t-CO ₂ /vehicle, vs. 2005)
	Reduce by 27% in all manufacturing sites (t-CO ₂ /vehicle, vs. FY2005)	CO ₂ emission reduction rate	Reduced by 23.9%	Reduced by 22.3%	✓✓	Adopt three-wet paint process	
	Reduce by 6% in logistics (Japan, North America, Europe, China, t-CO ₂ /vehicle, vs. FY2005)	CO ₂ emission reduction rate	Reduced by 4.7%	Reduced by 8.5%	✓✓	Promote modal shift and increased filling rate	
	Reduce by 1%/year in offices (Japan, North America, Europe, China, t-CO ₂ /floor area, vs. FY2010)	CO ₂ emission reduction rate	Reduced by 1.8%	Increased by 0.7% Mostly due to a revision in the national grid CO ₂ coefficient in Japan	×	Expand Power Producers & Suppliers (PPS) adoption	
	Reduce by 1%/year in dealers (Japan, t-CO ₂ /floor area, vs. FY2010)	CO ₂ emission reduction rate	Increased by 14.4%	Increased by 20.0% Mostly due to a revision in the national grid CO ₂ coefficient in Japan	×	Introduce energy-saving equipment in new outlets and expand PPS adoption	
New natural resource use minimization	Increase recycled material usage ratio per new vehicle for which production begins in FY2016 by 25% in Japan, U.S. and Europe	Recycled material usage ratio	Promoted activities	Promoted activities	✓✓	Promote activities	Increase recycled material usage ratio per vehicle by 70% (vs. 2010)
	Expand closed-loop recycling scheme with business partners	Results of initiatives	Bolstered cooperation with partners aimed at increasing recovery rate for interior plastic from scrapped vehicles	Promoted activities	✓✓	Promote activities	
	Improve end-of-life vehicle (ELV) recovery rate - Achieve top-level ELV recovery rate (Japan) - Promote proper treatment and resource recovery globally	Recovery rate	99.6% (Japan) Work carried out on system to recover, recycle used lithium-ion batteries globally	99.6% (Japan) Continuously develop on system to recover, recycle used lithium-ion batteries globally	✓✓	Promote activities	
	Reduce scarce resource usage	Results of initiatives	Introduced magnets for HEV motors with reduced rare earth usage, starting with newly launched North American Pathfinder HEV and Infiniti QX60 HEV	Expanded adoption of developed magnets with lower rare earth usage and introduced to newly launched X-trail HEV	✓✓	Continue adopting developed technologies in new models, promote development of magnets with lower rare earth usage. Wider adaption of low cost catalyst	
	Reduce waste 2%/year in Japan and 1%/year worldwide	Waste reduction rate	Reduced by 3.5% (Japan) Reduced by 7.0% globally	Reduced by 4.6% (Japan) Reduced by 7.3% globally	✓✓	Expand resource NESCO diagnoses worldwide	
	Promote management and reduction of water usage at all production sites	Results of initiatives	Further bolstered usage reduction initiatives at vehicle production plants worldwide	Promoted activities	✓✓	Promote activities	
Environmental management promotion	Enhance and promote environmental management throughout supply chain (consolidated companies, sales companies, suppliers)	Results of initiatives	Participated in CDP supply-chain program and adopted global standards for supplier surveys	Further enhanced supplier engagement through CDP supply chain program and briefing sessions to suppliers	✓✓	Expand THaNKS activity to supplier's energy saving	Promote comprehensive and effective initiatives for supporting management decisions and achievement of Nissan Green Program goals
	Promote reduction, substitution and management of environment-impacting substances	Results of initiatives	Continued management of environment-impacting substances, creation of well-planned schedule for their reduction and use of alternative substances	Further strengthened management of environment-impacting substances	✓✓	Continue enhancing management of environment-impacting substances	
	Reduce environmental impact of products with lifecycle assessments (LCAs)	Results of initiatives	Continued activities for reducing environmental impact of products under TÜV Rheinland certification for LCA methodology	Continued to conduct LCAs in line with development of the vehicle with certified methodology	✓✓	Continue reducing environmental impact of products	



▶▶ GRI G4 Indicators
▶▶ G4-EN18/G4-EN19/
G4-EN27/G4-EN28/
G4-EN33

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[Click here for detailed information on our environmental data.](#)

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THREE MAJOR ISSUES

Nissan's ultimate goal is to limit the environmental impact and resource consumption of its corporate activities and its vehicles during their entire lifecycle to a level at which the planet can naturally absorb. Toward this goal, the company pursues activities in three key areas: reducing CO₂ emissions, promoting resource recycling and preserving air, water, soil and biodiversity.

1. Reducing CO₂ Emissions

The business structures of the automobile industry are changing greatly in the face of demand to reduce CO₂ emissions and to move away from dependence on fossil fuels. As a global automaker, Nissan takes into account CO₂ emissions through the whole value chain, including suppliers, from the procurement of raw materials to the transportation and operation of vehicles. Understanding the importance of balancing efforts in this area with its business activities, the company is striving to reduce emissions through such initiatives as developing new technologies and using renewable energy.

2. Resource Recycling

Nissan manufactures and markets its vehicles all around the world, utilizing resources in a variety of forms. With the basic approach of treating resources as limited, believing that they should be used as efficiently as possible and minimizing environmental impact, the company is working to make effective use of resources at every stage of its vehicles' lifecycles so as to sustainably offer the world the rich benefits of mobility.

3. Air, Water, Soil, Biodiversity

Humankind depends upon balanced ecosystems encompassing air, water, soil and living creatures. To maintain our irreplaceable world in a healthy state for future generations, Nissan is working to minimize its impact on ecosystems through its corporate activities and the lifecycle of its vehicles, making this approach a new part of its values as it continues to develop and champion environmentally friendly technologies.

ENVIRONMENTAL VISION

A Symbiosis of People, Vehicles and Nature

As a global automaker, Nissan takes active steps to identify the direct and indirect impacts of its business on the environment to help minimize them. The goal is to reduce the environmental impact and resource consumption of Nissan's corporate operations and its vehicles throughout their lifecycle to a level that can be absorbed naturally by the Earth. Toward this end, the company endeavors to leave as small an ecological footprint as possible.

Nissan aims to be a "Sincere Eco-Innovator." The company shows that it is sincere by taking a proactive stance toward addressing environmental challenges, reducing its real-world environmental impact and providing its customers with innovative products, technologies and services as contributions to a sustainable mobility society. It is actively working to contribute to the protection of the global environment through sustainable mobility to achieve "a Symbiosis of People, Vehicles and Nature."

NISSAN GREEN PROGRAM 2016

To achieve its environmental vision, Nissan launched its six-year environmental action plan, Nissan Green Program 2016 (NGP2016), in fiscal 2011. NGP2016 is based on thorough assessments focusing on factors with critical impact. These assessments include input from energy and resource specialists around the world. NGP2016 also takes into account survey results in Japan that help gauge employees' understanding and opinions on environmental issues, Nissan's activities, and the company's business priorities.

NGP2016 focuses on reducing the environmental impact of Nissan's corporate activities and pursuing harmony between resource consumption and ecology. The company aims to promote diversity and resource circulation by means of efficient use and recycling of both energy and resources, expanding the application of green technologies that were developed under NGP2010, its previous environmental action plan. NGP2016 has four specific key actions that involve activities in development, manufacturing, sales, service and all other departments. These are zero-emission vehicle penetration, fuel-efficient vehicle expansion, corporate carbon footprint minimization, and new natural resource use minimization.

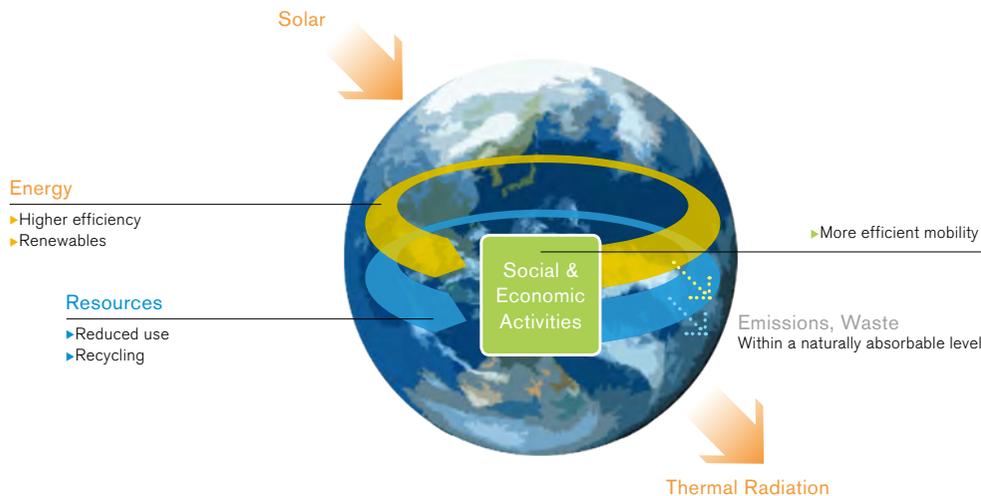
Thanks to Nissan Green Program activities, the company forecasts that

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 Click here for more information on Nissan Green Program 2016.

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CO₂ emissions from its new vehicles and corporate activities will peak in the 2020s and then subside, even taking into account plans to increase sales globally. The volume of new natural resource use will be maintained at the level of the 2010s.

Promoting Energy and Resource Diversity, Efficiency and Recycling



Based on Beyond Growth: The Economics of Sustainable Development, by Herman E. Daly

ENVIRONMENTAL MANAGEMENT PROMOTION

Company Organizations for the Environment

To achieve the goals of Nissan Green Program 2016 (NGP2016), Nissan has created a global framework for environmental management and is setting targets and implementing closely coordinated action plans across all areas of its activity, from product and vehicle development, manufacturing, marketing and sales to other divisions.

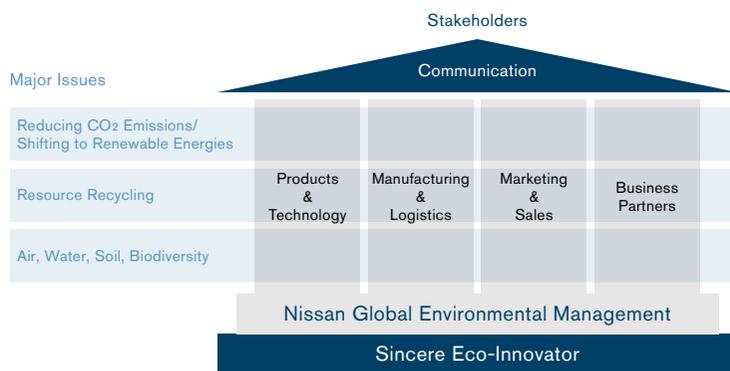
To carry out its global environmental management, Nissan has established an organizational approach linking its various functions and regions. The Global Environmental Management Committee (G-EMC), including a board member as co-chair, meets twice annually. It determines with corporate officers chosen based on issues to be discussed the overall policies and content of reports put before the Board of Directors. The Corporate Strategy and Business Development Division, was launched to determine which proposals will be forwarded to the G-EMC and to assign specific actions to each division. This department is also responsible for the efficient management and operation of environmental programs based on the PDCA (plan, do, check, act) cycle.

In addition, Nissan has established committees to implement environmental management and activities at a deeper level in each of its regions. The European Environmental Management Committee was set up in 2012, followed by the Japanese Environmental Management Committee, the North American Environmental Management Committee, and the Chinese Environmental Management Committee in 2013. These groups report to regional management committees and cooperate with the Corporate Strategy and Business Development Division while reporting to the G-EMC.

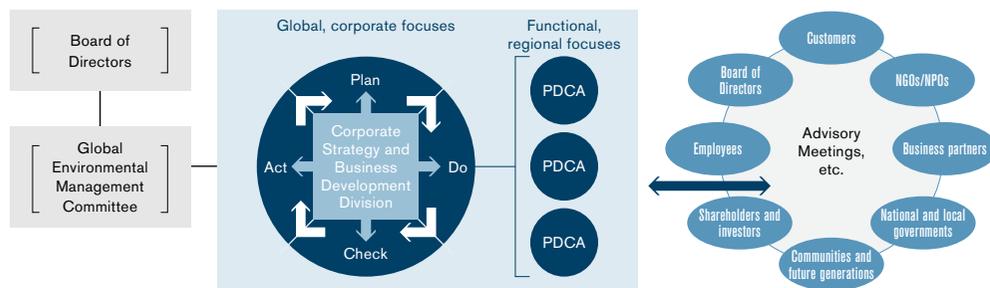
Nissan's strategy is built on the concept of listening to the views of wider society and identifying potential risks and opportunities. The company takes into account opinions from leading experts and organizations and examines assessments from rating organizations, using this information to analyze its goals and activities and enhance its environmental measures.

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Nissan's Framework for Global Environmental Management



Environmental Management Organization



Stakeholder Engagement

Nissan analyzes its use of resources and energy, the impact on the environment and how it can reduce that impact throughout the value chain. Through these analyses, the company identifies stakeholders at each stage, from the extraction of resources needed to make vehicles to manufacturing, shipping, use and disposal of end-of-life vehicles. Through a broad range of approaches, it gains an understanding of stakeholder views and the diverse needs of society.

As one example, members of Nissan's Board of Directors hold meetings with the participation of researchers and experts who lead the environmental field in the academic and industrial worlds, as well as leading businesspeople from various sectors. They discuss the direction and appropriateness of Nissan's business strategies; this input is considered in those strategies going forward.

Customers, shareholders, investors, business partners, suppliers, NGOs/NPOs, local communities, national and local governments, future generations, employees and members of Nissan's Board of Directors.

Materiality Assessment

The automotive industry is subject to environmental regulations and standards around the world, covering areas like CO₂ and other exhaust emissions, energy, fuel efficiency, noise, material resources, water, chemical substances, waste and recycling.

These regulations are becoming more stringent every year. Consumer needs and wishes concerning environmental performance are also changing.

To meet these various social demands, Nissan uses materiality assessments to analyze potential opportunities and risks. The company identifies those priority issues viewed by both Nissan and stakeholders as important, sets necessary policies and targets for tackling them effectively and works them into its environmental strategy.

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For the results of the company's materiality assessments, see the Materiality Matrix 2015.

Enhancing Environmental Management Based on ISO 14001

As of January 2011, the Nissan Global Headquarters and all other main Nissan facilities in Japan, including those for R&D, production and logistics, along with all product development processes, have acquired integrated ISO 14001 certification for environmental management systems. The company has appointed an environmental management officer to oversee Nissan's environmental activities. Through steady application of the PDCA (plan, do, check, act) cycle, the company is improving its environmental performance. The coordinated goals set by the environmental management officer for the entire company are cascaded

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down to the employees working in all facilities through local offices.

Nissan's ISO secretariat oversees companywide efforts, and the local offices in Japan are responsible for activities at each facility and division and for coordinating the proposals from employees. The secretariat and local offices engage in discussions at least once a month to confirm the progress made toward established goals, share best practices, improve management systems, draw up plans for the next fiscal year and communicate requests from local facilities and divisions. The items discussed are reported to the environmental management officer twice a year (once during the management review conference) so that the company can decide on needed improvements.

To confirm management is functioning properly, Nissan annually undergoes audits by third-party organizations and carries out its own internal audits of its environmental systems and environmental performance to strengthen the company's measures, based on the PDCA cycle.

The company has also obtained ISO 14001 certification at its main production plants outside Japan. Nissan's policy is to extend environmental management systems with these same criteria to regions of new expansion.

Product Development Policy

Nissan has introduced "QCT-E," adding an environmental component to the traditional QCT indices of quality, cost and time, and has crafted a global environmental management policy, setting targets for environmental performance in all areas of its business.

Under Nissan Green Program 2016 (NGP2016), the company's environmental action plan, Nissan annually invests 70% of its research and advanced engineering budget in environmental technologies. The company is also promoting its Common Module Family concept, sharing platforms and module components with its Alliance partner Renault. Savings from reduced costs are invested in new solutions, including cutting-edge environmental technologies.

Raising Employee Awareness

Nissan's environmental activities are enabled by the knowledge, awareness and competency of its employees. Based on ISO 14001 activities, the company conducts employee education rooted in NGP2016 regarding reduction of CO₂ emissions, energy and water consumption and waste. In addition, education regarding environmental accident prevention, including

management of hazardous materials, is provided every year to all employees, including those from affiliated companies working in Nissan production facilities. At production plants, ongoing improvements of employee competency to reduce environmental impact are promoted through not only education and training programs but also the quantitative evaluation of each employee. The content of these training programs is updated once a year.

In Japan, Nissan implements its own curriculum for the education provided to new employees during orientation and to mid-ranking and management personnel during the seminars to deepen their understanding of environmental issues surrounding the auto industry, as well as the substance of NGP2016. The company also holds "town hall" style meetings that bring executives together with employees. Employees can stay up to date on Nissan's latest environmental initiatives through features in the intranet, internal newsletters, and in-house video broadcasts. All employees also receive an Environmental Policy Card with a pledge to pursue personal environmental activities, which they carry at all times.

Overseas, Nissan shares information and provides education to employees through the intranet, videos, events and various other communication approaches suited to each region.

Employee-Initiated Activities and Evaluation System

In fiscal 2008, Nissan added the "environment" factor to the range of *kaizen* activities carried out by quality control (QC) circles. This creates a mechanism that encourages employees to think proactively and propose ideas to improve environmental aspects of Nissan's business. Managers encourage employees' active participation by communicating how these QC circle activities are linked to achievement of the goals in Nissan Power 88, the company's mid-term business plan. The ideas proposed by employees go to managers and QC circle secretariats for assessment of their potential contribution to environmental improvement, among other factors, after which Nissan implements them.

The knowledge and skills of the frontline employees on CO₂ emission reduction, energy management, water conservation and waste and landfill reduction have been compiled in a best-practices manual and shared among global facilities. A system to reduce cooling-tower water use was born from this activity. Nissan also holds contests in some facilities during officially designated months in Japan to keep employees motivated to participate in environmental activities. These include the

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 Click here for more information on Nissan Power 88.

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Water Usage Reduction Idea Contest in June and the Waste Reduction Idea Contest in 3R month, October.

Nissan uses various methods to reward employees for their contributions to environmental improvement activities. One is inclusion of these activities in the "commitment and target" annual performance goals used at some Japanese and overseas locations. This system assesses employees' achievement of goals, reflecting this in performance-related elements of bonuses. Employees are also recognized for environmental improvement through Nissan Prizes presented by the CEO or other executives, awards given by plant heads, and "THANKS CARD" recognition from managers for excellent work or achievements.

Working with Consolidated Production Companies

Nissan encourages its consolidated production companies in a variety of markets to acquire ISO 14001 certification and to undertake other environmental initiatives based on their respective policies. Meetings with major consolidated production companies in Japan are held to exchange views on cooperation toward the goals outlined in NGP2016. The meetings lead to a deeper shared understanding of the details of NGP2016 and the initiatives undertaken by each company.

Working with Dealerships

Nissan's dealerships in Japan have introduced an original approach to environmental management based on ISO 14001 certification called the Nissan Green Shop certification system. This system is managed through internal audits conducted by the dealerships every six months, in addition to regular annual reviews and certification renewal audits carried out every three years by Nissan Motor Co., Ltd. As of the end of March 2016, the system has certified 2,700 outlets of 157 dealers, including parts dealers.

Nissan conducts an annual survey of its dealerships in Japan, collecting comments and requests regarding Nissan's environmentally friendly vehicles and other environment-related initiatives. The findings are used to guide actions toward improved performance and are incorporated into the PDCA cycle at all dealerships.

Working with Suppliers

The purchasing divisions of Nissan and Renault ensure full understanding of CSR and compliance with regulations in the supply chain through *The*

Renault-Nissan Purchasing Way and the *Renault-Nissan CSR Guidelines for Suppliers*. In the environmental aspect, they carry out supply-chain management in line with the Nissan Green Purchasing Guidelines.

Based on Nissan Green Program 2016 (NGP2016), Nissan holds regular annual environmental briefing sessions for suppliers when it fully shares targets, action plans and understanding of what constitutes environmental impact. Since fiscal 2012, it has conducted surveys to gather information from suppliers on their environmental performance in areas including CO₂ emission levels, water use and waste. In fiscal 2014, Nissan further expanded its activities by adopting the supply-chain program run by CDP, an international nonprofit organization that manages a global system for disclosure of companies' environmental impact and strategies. In fiscal 2015, it worked to improve the accuracy of performance data with the cooperation of CDP and other external specialists. Further, the company institutes mandatory questionnaires concerning handling of environment-impacting substances and environmental management when selecting each supplier.

Communication and Assessment of Environment-Related Activities

Companies today are called upon to disclose a wide range of information about how they are managing risks and handling issues related to such environmental issues as climate change and natural resources. Nissan makes detailed disclosure of its environmental performance on its website for stakeholders, including investors, rating agencies and other specialists in accordance with Global Reporting Initiative (GRI) guidelines. Among data disclosed are CO₂ emission and waste discharge levels, as well as the amount of energy, water, materials and other resources consumed. Nissan's communication efforts also include briefings to describe its environmental initiatives.

Nissan was selected from among more than 6,000 global corporations for inclusion on the Climate A List in the Global Climate Change Report 2015 issued by CDP, becoming the only Japanese automotive company chosen by them. It also scored a perfect 100 in the organization's Climate Disclosure Leadership Index (CDLI).

Nissan received its perfect score for working toward its vision of reducing "well-to-wheel" CO₂ emissions from new vehicles by 90% by the year 2050 (compared with levels from 2000) and for its transparent disclosure of environmental information. Nissan was named to the Climate A List due to its championing of the Nissan LEAF and other zero-emission vehicles and its

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✦ [Click here for more information on supply-chain management.](#)

✦ These international guidelines, published by the NGO Global Reporting Initiative, promote actions by companies to define overall policy direction toward environmental, social and economic development and to disclose information on their overall plans and specific initiatives.

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implementation of such innovative initiatives as LEAF to Home by which Nissan LEAF owners can use electric power from their vehicles to help cut energy use at home during peak hours. Nissan's efforts to reduce CO₂ emissions in the manufacturing process were also noted.

The company also finished second in the manufacturing sector on the 19th Nikkei Environmental Management Survey. The survey, conducted by Nikkei Inc., examines and evaluates how Japanese corporations balance business concerns with environmental policies, assessing the performance of 1,737 companies in the manufacturing sector and 1,493 companies in non-manufacturing industries, including retail, restaurants, power and gas and construction. Nissan achieved a total score of 489 points out of a maximum of 500 across five categories and was the only manufacturing company to receive a perfect score in the global warming countermeasures category.

This result was the fruit of implementation of the mid-term environmental action plan NGP2016—which extends to sales and service divisions as well as development, manufacturing and purchasing—and ongoing *kaizen* activities. The survey in particular praised global energy-saving measures from the Nissan Energy Saving Collaboration (NESCO) teams.

NESCO expert teams conduct energy-saving audits at Nissan's production sites by inspecting the way energy is used, identifying waste and suggesting improvements. NESCO has developed a global training program based on energy-saving know-how developed in Japan. There are currently seven teams in Japan and four outside Japan. In 2014, as part of Alliance activities, NESCO began contributing to Renault's efforts to reduce CO₂ emissions.

Lifecycle Assessment to Reduce Environmental Impact

Nissan uses the lifecycle assessment (LCA) method to evaluate and comprehensively assess environmental impact in all stages of the vehicle lifecycle, from resource extraction to production, transport, customer use, and vehicle disposal. LCAs are also carried out for new technologies as they are introduced with the goal of developing more environmentally friendly vehicles.

Company calculations show that over its lifecycle the Nissan LEAF produces CO₂ emissions up to 40% lower than gasoline-powered vehicles of the same class. In 2010, this assessment was certified by the Japan Environmental Management Association for Industry. Nissan has

continued to conduct LCAs in line with development of the vehicle.

In December 2013, TÜV Rheinland in Germany also certified Nissan's LCA methodology. This certification is based on ISO 14040/14044 standards and guarantees the soundness of the environmental impact calculations in Nissan's product LCAs. Nissan bases LCAs for new vehicles on its certified methodology; the company's certification was renewed in fiscal 2015. The company continues to lower its vehicles' environmental impact by adopting new technologies and more efficient processes in manufacturing, aiming for further CO₂ emission reductions over the lifecycle of its new vehicles.

TÜV Rheinland certificate



REDUCING CO₂ EMISSIONS

The United Nations Framework Convention on Climate Change states that to stabilize the climate system it is necessary to keep average temperatures from rising more than 2 degrees Celsius on a global basis. Based on this assumption, Nissan has calculated that “well-to-wheel” CO₂ emissions for new vehicles will need to be reduced by 90% by 2050 compared with levels in 2000. The efficiency of internal combustion engines will need to improve in the short term to help achieve this. Over the long term, Nissan also aims

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▶ For details on the LCA for the Nissan LEAF, etc., see the CSR data section in this report.

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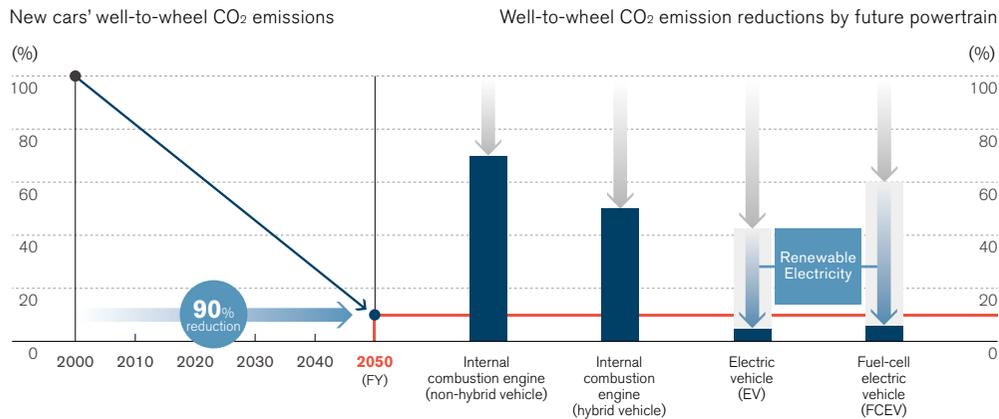
to increase the adoption of zero-emission vehicles—battery electric and fuel-cell electric (EVs and FCEVs)—and to promote the use of renewable energy to power these technologies.

Nissan is advancing technological development on the basis of a zero-emission future scenario. Specifically, it is concentrating its efforts on two pillars: zero emission, which involves widespread use of zero-emission vehicles in a holistic approach to promote a sustainable society; and PURE DRIVE, which reduces CO₂ emissions by developing fuel-efficient internal combustion engine technologies and introducing them to the market.

Nissan has also calculated that it needs to reduce CO₂ emissions from its corporate activities by 80% by 2050 compared with 2005 levels. Accordingly, it plans to continue its energy efficiency measures, leverage the power storage ability of EV batteries and expand its use of renewable energy.

▶▶ page_31
 ▶ Click here for more information on PURE DRIVE.

Our CO₂ Reduction Scenario



▶ Created by Nissan on the basis of the Intergovernmental Panel on Climate Change Fourth Assessment Report.

ZERO-EMISSION VEHICLE PENETRATION

Electric vehicles (EVs) demonstrate that what is good for drivers and the planet is also good for business. Nissan, including its Alliance with Renault, is engaged in a comprehensive approach that involves boosting production and sales of EVs and other activities coordinated in a variety of partnerships for popularization of EVs.

Zero-Emission Leadership for the Alliance

Nissan's commitment to sustainable mobility addresses concerns over climate change and supports sustainable profits for Nissan while satisfying customers' demands for more environmentally friendly vehicles. Greater use of renewable energy, such as solar, wind and hydropower, in the future will continue to improve EVs' environmental contribution as electricity generation becomes cleaner. Increased use of batteries as energy storage devices will also boost the market for EV batteries after their initial use for transportation power.

In 2010, Nissan began sales of its mass-produced 100% electric vehicle, the Nissan LEAF. In 2014, Nissan expanded its leadership in zero-emission mobility into the LCV segment with the launch of the e-NV200, the company's second all-electric vehicle, in the European and Japanese markets. As of 2015, the new Nissan LEAF—powered by a 30 kWh lithium-ion battery that makes possible a driving range of 280 km in JC08 mode—was on sale in Japan, North America and Europe.

Nissan LEAF Sales Exceed 200,000

The Nissan LEAF is powered by a lithium-ion battery pack and an electric motor and emits no CO₂ or other exhaust emissions during operation. The Nissan LEAF offers excellent, fun-to-drive performance, with smooth, strong acceleration and quiet delivery across a speed range comparable to that of other models, as well as great handling stability realized by well-balanced weight distribution. All of these characteristics have earned the Nissan LEAF more than a hundred industry awards, including Car of the Year award in major markets (Japan, the United States, Europe, etc.), since its debut in 2010.

The Nissan LEAF has been introduced in 47 markets with sales steadily increasing. In March 2016, total sales worldwide exceeded

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200,000 vehicles, making the Nissan LEAF the best-selling EV in the world. While the low environmental impact of EVs is attractive, consumer awareness of other characteristics, such as the low-charging and operation costs and superior acceleration and steering performance, is likely to have been a factor in the strong sales.

The Nissan LEAF also has advanced features for customer convenience. Advanced IT systems allow the driver to control some functions remotely, via a smartphone or other device, and can help the driver find nearby charging stations and the most energy-efficient routes.

Nissan has worked with local governments, corporations and other entities to deploy charging infrastructure and encourage adoption of EVs. The company aims to leverage the valuable experience gained by having Nissan LEAFs in use around the world to stimulate further development and popularization.

The company's calculations show that the Nissan LEAF and other EVs produce considerably less CO₂ emissions over their entire lifecycle, from manufacturing to end-of-life disposal, compared to gasoline-powered vehicles of the same class. ▶

EV batteries can do more than just provide power for driving. As energy storage devices, they can play a key role in supporting the rollout of renewable energy with intermittent output, such as solar and wind power. By contributing to the shift to renewable energy, EVs play an essential role beyond transportation to help achieve a low-carbon society.

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▶ [Click here for more information on the Nissan LEAF lifecycle assessment.](#)



The Nissan LEAF.

First EV Taxis in Canada

In November 2015, Canada's first all-electric taxi service was launched in Montreal, Quebec, after the operator Taxelco bought 24 Nissan LEAFs equipped with 30 kWh lithium-ion batteries. Taxelco was founded by XPND Capital, which plans to expand the service to put 2,000 EV taxis on the streets of Montreal by 2019.

New Website Responds to Nissan LEAF Questions

In November 2015, the company launched a website for the Japan market answering customer questions about its most popular EV: "Nissan LEAF Q&A: Real Owners. Real Answers." The respondents, approximately 100 owners chosen as Nissan LEAF official ambassadors, provide information based on personal experiences regarding such aspects as ease of use, regional charging infrastructure, power usage in snowy conditions and acceleration performance. Answers are made public to ensure they can be read widely.

The e-NV200, a Practical, Sustainable City Delivery Vehicle

Based on the Nissan NV200, a multipurpose commercial van, the e-NV200 combines the interior roominess and versatility of the NV200 with the acceleration performance and refinement of an EV. It has been produced at Nissan's Barcelona Plant in Spain since June 2014 and, as of March 2016, is sold in 26 countries, including Japan and a number of European nations. The e-NV200 is also used by taxi services in Barcelona and Amsterdam and has been adopted in Japan by a wide range of customers from urban delivery businesses to local authorities.

Compared to commercial vehicles using internal combustion engines, the e-NV200 reduces operating costs and contributes to an enhanced environmental image thanks to the vehicle's zero exhaust emissions and reduced noise pollution. Additionally, the vehicle offers smooth, strong acceleration performance while being extremely quiet.

The inclusion of a hydraulic brake system makes the vehicle's regenerative braking more effective, enabling a driving range of 185 km to 190 km on a full charge (in JC08 mode). Two 100-volt power outlets that can draw a maximum

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of 1,500 watts of power from the battery are installed in the front-seat side and the cargo area (of the Japan model). They provide a convenient and safe electrical power source that comes in handy for offsite jobs, outdoor events and construction work, or in the case of an emergency.

The driver can also manually set the remaining battery level. By halting the power supply automatically with anything from 2 to 11 of 12 bars remaining on the battery gauge, the driver can ensure that the vehicle has enough energy left in the main battery pack for the ride home.

Construction companies that have adopted the e-NV200 as a power source for onsite work have given positive feedback. As they do not use fuel-powered generators, it reduces noise around the site, and because the construction site is quiet, communication is easier, improving efficiency.

With five-seat and seven-seat wagon versions available, the vehicles can also be used for carrying passengers.



As a mobile power source, the e-NV200 has potential for application in a range of business contexts.



The e-NV200 gives Japanese and European urban goods delivery and taxi businesses the opportunity for zero-emission operations.

Fuel-Cell Electric Vehicles

Fuel-cell electric vehicles (FCEVs) are another type of zero-emission vehicle producing no CO₂ or other harmful emissions. Powered by electricity generated from hydrogen and oxygen, FCEVs emit only water during driving. Nissan believes that in building a sustainable mobility society, both FCEVs and EVs are important from an energy diversity perspective. Nissan's FCEVs make use of proprietary fuel-cell technology, high-power electric systems and control systems refined in EV development, as well as high-pressure gas storage technologies from compressed natural gas vehicles (CNGVs).

To advance FCEV research and development and make possible their wider adoption, in 2013, Daimler AG, Ford Motor Company and Nissan, under the Alliance with Renault, signed a unique three-way agreement for the joint development of a common fuel-cell system. In July 2015 Toyota Motor Corporation, Honda Motor Co., Ltd. and Nissan announced a new joint support project for the development of hydrogen station infrastructure in Japan. In addition to partially covering the operating costs of hydrogen stations, the three automakers have also agreed to help infrastructure companies deliver the best possible customer service and create a convenient, hassle-free refueling network for owners of FCEVs.

Pursuing a Zero-Emission Society

The widespread use of zero-emission vehicles, which produce no CO₂ emissions during operation, is an effective way of achieving sustainable mobility. The auto industry must go beyond producing and selling zero-emission vehicles to help put the necessary infrastructure in place to ensure that the vehicles are economical to use. No company can achieve this on its own. The Renault-Nissan Alliance is promoting the development and production of zero-emission vehicles and the construction of infrastructure, forging numerous zero-emission partnerships with national and local governments, electric power companies and other organizations.

Nissan is also taking part in a comprehensive range of initiatives focusing on zero-emission mobility, including the production of lithium-ion batteries, secondary use and recycling of batteries, construction of vehicle-charging infrastructure and standardization of charging methods with other manufacturers. Increased uptake of zero-emission vehicles will bring changes to people's lifestyles, laying the groundwork for a sustainable mobility society. Nissan provides more than just EVs themselves; it embraces the new values that they represent as well.

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Building a Zero-Emission Society with EVs



► An organization established with the aim of increasing quick charger installations, indispensable for the further diffusion of electric vehicles and standardization of charging equipment. CHAdemo is made up of automakers, electric utilities, charger manufacturers, charging service providers and other supporting groups.

China Launch of the Venucia e30, Venucia's First 100% EV

In September 2014, Dongfeng Nissan Passenger Vehicle Company, a division of Nissan's joint venture with Dongfeng Motor Company Ltd., launched the Venucia e30 as local brand Venucia's first 100% electric vehicle. The Venucia e30 will bring Chinese consumers a reliable and enjoyable EV experience at affordable running costs.



The Yokosuka EV Creation Project

On June 3, 2015, Nissan signed the Yokosuka EV Creation Project partnership agreement with the city of Yokosuka, Kanagawa Prefecture, targeting further adoption of EVs.

The company has designated the Oppama Plant in Yokosuka as a "mother plant" for EV production, promoting zero-emission mobility through comprehensive activities including establishment of charging infrastructure and encouraging the adoption of EVs, as well as vehicle production and sales. Meanwhile, Yokosuka has pioneered policies from the initial stage of creating EV demand, such as introducing purchasing subsidies, supporting installment of charging stations and conducting a project based around the use of Nissan LEAFs as taxis.

There are plans to develop partnership agreement activities further with the goal of boosting the proportion of EVs to 10% of all owned vehicles by fiscal 2020. Both Nissan and Yokosuka prioritize building charging infrastructure in housing complexes and employee parking lots to encourage a shift to EV use. The company will contribute to these activities by providing various information and carrying out vehicle demonstrations.

Providing Infrastructure to Support Zero-Emission Vehicles

Nissan is encouraging local governments, public and commercial facilities and others in Japan to install quick chargers. It is also continuing to increase the number of Japanese Nissan dealerships with quick chargers, which stood at 1,700 as of March 2016.

Quick chargers, which can charge batteries from zero percent up to 80% capacity in around 30 minutes, are a key part of the infrastructure needed for the widespread adoption of EVs. Nissan launched its quick chargers in 2011, and in the following year, the company improved them to make chargers quieter and the connector easier to use, as well as enabling on-the-spot payment.

In May 2014, Nissan jointly established a new company, Nippon Charge Service (NCS), with other Japanese automotive manufacturers to promote installation of chargers for electric-powered vehicles (including EVs and plug-in hybrid vehicles). Under NCS management, the companies aim to

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provide a convenient charging network service letting drivers charge their vehicles anywhere with a single card.

Nissan has also started working with companies that support the spread of EVs by installing EV chargers at their workplaces to make it easier for employees to commute using the Nissan LEAF.

In the United States, Nissan launched its "No Charge to Charge" program, which provides free access to selected charging stations for two years with the purchase or lease of a new Nissan LEAF. As of January 2016, the program is running in 26 cities where Nissan LEAF sales are high, including San Francisco, Los Angeles, Seattle and Portland, and the company plans to expand to more cities in the future.

In Europe, too, Nissan is working with companies in the energy industry and others to install quick chargers compliant with the CHAdeMO standard. It is also collaborating with BMW to encourage the spread of EVs and PHEVs by boosting the number of quick-charging stations that can be used by vehicles from both companies. Plans to build a national grid in South Africa and 120 stations in 19 U.S. states were announced in May and December 2015, respectively.

As of March 2016 there were more than 10,000 CHAdeMO-compliant quick chargers worldwide.

Installing Chargers at Workplaces

Nissan is putting measures in place so that its employees can make their own contributions to the achievement of a zero-emission society. One example is the company's program to help employees become Nissan LEAF owners and ambassadors for the vehicle, expanded in fiscal 2015. As part of this program, normal chargers are being installed in employee parking lots at Nissan business locations around Japan, with the total projected to reach 2,000 by the end of fiscal 2016.

By March 2016, some 1,100 charging points were in place, including 300 at the Tochigi Plant, 152 at the Nissan Technical Center, and 140 at the Kyushu Plant. Employees find it easier to commute in a Nissan LEAF when they know they can recharge the battery at work. The more Nissan employees become Nissan LEAF owners, the more they can contribute to lower CO₂ emissions.

Nissan EVs: Contributing to Realization of Smart Grids

Nissan EVs can provide electricity to households through the Power Control System. The LEAF to Home power supply system lets a Nissan EV share the electricity stored in its high-capacity lithium-ion batteries with an ordinary home once the car is connected to the home's electricity distribution panel via its quick-charging port. In this way EV batteries can provide additional value. The connector conforms to CHAdeMO, a fast-charging protocol used in global markets where Nissan EVs are sold, and ensures a high level of versatility, stability and reliability.

Nissan and Enel, Europe's second largest power company in terms of installed capacity, have also signed an agreement targeting a revolution in energy usage management. The two companies teamed up to develop an innovative system allowing EV fleets to operate as "energy hubs," thereby contributing to the realization of smart grids.

Overseas Production of Lithium-Ion Batteries

In Japan, NEC Corporation and Nissan's joint-venture company, Automotive Energy Supply Corporation (AESC), produces lithium-ion batteries for Nissan EVs at its Zama facility. The facility assembles modules consisting of multiple sheet cells packed into compact metal cases with attached terminals. These are put together in battery packs at Nissan's Oppama Plant and then fitted into vehicles.

Nissan also manufactures the Nissan LEAF and EV batteries overseas. In the United States, the company has produced lithium-ion batteries at its Battery Plant and EVs at its Vehicle Assembly Plant in Smyrna, and in Europe, at its Sunderland Plant in the United Kingdom.

The Nissan New Mobility Concept

The Nissan New Mobility Concept is an ultracompact 100% electric vehicle that was developed in response to rising numbers of senior citizens and single-member households, along with increasing use of automobiles for short-distance trips by up to two people. Even smaller than a "kei" minicar, the driver has excellent visibility and a good feel for the dimensions of the vehicle, making it an ideal choice for residential neighborhoods and other areas with narrow streets and poor visibility, as well as regional cities and islands pursuing compact-city policies.

Since fiscal 2011, with cooperation from Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Nissan has held driving trials

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together with corporations and local governments to conduct tests and surveys. Following the MLIT's January 2013 announcement of an authorization system for use of ultracompact vehicles on public roads, Nissan is currently testing vehicles in 22 areas. To date the vehicles have mainly been used for tourist purposes as part of regional revitalization, but they are now being applied to a fuller range of purposes. For example, in Tokyo's Koto Ward, the municipal office is using five as official cars for transporting small numbers of people over short distances, while an electrical construction company in the ward uses another five to transport people between its business locations.

From October 2013 to September 2015, Nissan conducted "Choimobi Yokohama," an urban one-way car-sharing service, using the Nissan New Mobility Concept in Yokohama, Kanagawa Prefecture. Around 13,000 people registered as members, mainly in central Yokohama. In some 60,000 journeys, vehicles traveled a total of around 220,000 kilometers.

Nissan fully leverages the knowledge and information acquired from all its nationwide projects, offering advice on new uses for EVs and ways to improve traffic flow and implementing smart mobility for the next generation.



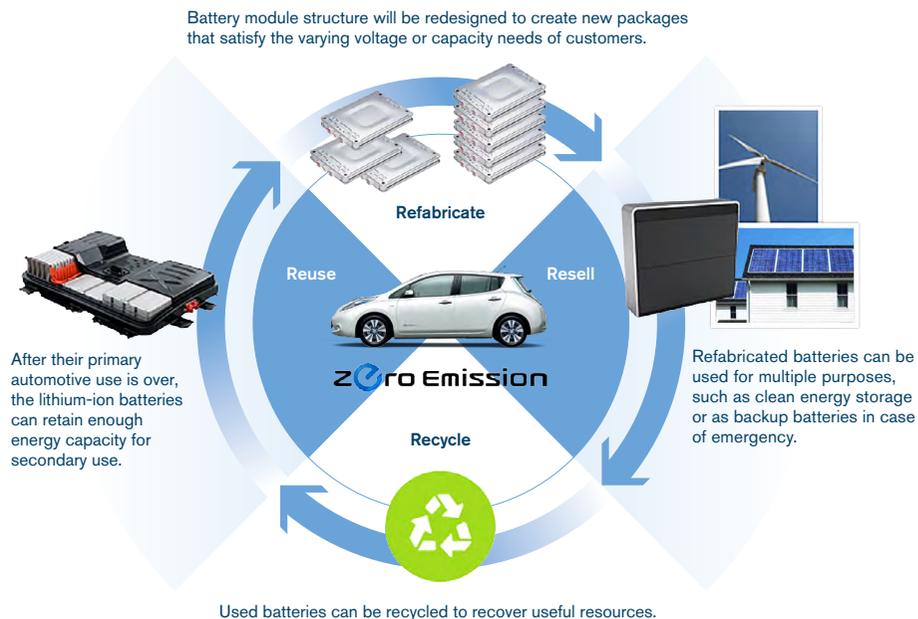
The "Choimobi Yokohama" service using the Nissan New Mobility Concept.

Joint Venture to Promote Second-Life Use for Batteries

Lithium-ion batteries used in Nissan's EVs retain capacity well beyond the useful life of the vehicles themselves. "4R" business models—which reuse, resell, refabricate and recycle lithium-ion batteries—allow their effective use for energy storage solutions in a range of applications, thus creating a much more efficient energy cycle of battery use.

As the EV market expands, Nissan sees a need to utilize reusable lithium-ion batteries more effectively. In 2010, it launched 4R Energy Corporation, a joint venture with Sumitomo Corporation. This company is developing and testing to use EV batteries as part of a stationary energy storage system. Japan is expected to see rising demand for such systems as part of energy storage and backup power systems that also feature solar panels on homes or business structures, and 4R Energy has already started sales of them for houses and apartment buildings.

4R Concept



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4R Energy is actively developing a range of storage systems built with used Nissan LEAF lithium-ion batteries. In addition to conducting an ongoing experiment with a large-capacity storage system in Osaka's Konohana Ward since 2014, it expanded its activities in November 2015 by launching a power system stabilizer test in Satsumasendai, Kagoshima Prefecture. It has also started testing a small-capacity storage system at a commercial facility in Okinawa Prefecture, refining its performance assessment for used module units and selection standard technologies. In July 2015, the Nissan Advanced Technology Center (NATC) adopted an energy management system built from 24 used Nissan LEAF batteries.

FUEL-EFFICIENT VEHICLE EXPANSION

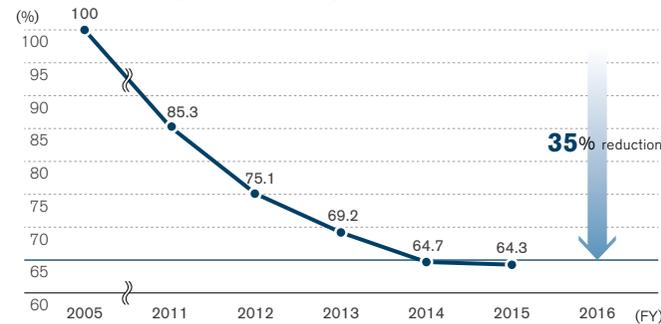
Demand for motor vehicles is expected to continue to rise. Mature markets are recovering from the global recession. Emerging markets continue to expand. Nissan is pursuing the greatest possible improvements to the fuel efficiency of internal combustion engines and introducing more fuel-efficient vehicles to the market.

Improved Corporate Average Fuel Efficiency

Nissan strives to develop technologies to maximize the overall energy efficiency of internal combustion engines and improve transmission performance. It is also working to boost the efficiency of hybrid systems that gather and reuse kinetic energy captured from braking. Nissan's core technologies in this area are lithium-ion batteries, Intelligent Dual Clutch Control Hybrid and Xtronic transmission (Continuously Variable Transmission: CVT) systems. Considering space within the vehicle, usage, price and other factors, the company selects the optimum fuel-efficiency technologies for particular vehicles and launches them in the market. The aim is to reduce fuel consumption and CO₂ emissions without sacrificing fun and ease of driving. Nissan is steadily launching new products in its line of particularly low-emission, fuel-efficient PURE DRIVE vehicles.

By fiscal 2016, Nissan targets a 35% improvement in corporate average fuel efficiency from the fiscal 2005 level (as measured in average fuel efficiency in the Japanese, U.S., European and Chinese markets). In fiscal 2014, the target was achieved ahead of schedule.

Corporate Average Fuel Efficiency Improvement



Top-Level Efficiency Due to Improved Engines and CVT

Current internal combustion engine vehicles lose approximately 70% of their fuel's energy as waste heat. Nissan aims to minimize energy loss and increase fuel efficiency by improving combustion efficiency, as well as reducing intake and exhaust resistance and friction.

Nissan is expanding its range of fuel-efficient engines. The Qashqai's new 1.2-liter gasoline direct-injection turbo engine has boosted fuel efficiency by up to 11%. Technologies including a low-pressure cooled exhaust gas recirculation system and mirror bore coating in the Juke's 1.6-liter gasoline direct-injection turbo engine have increased fuel efficiency by up to 10%. The Note's engine has improved thermal efficiency and added regenerative control and Idling Stop systems, while the Maxima's new V6 3.0-liter engine, with around 60% of its components redesigned, has boosted fuel efficiency by up to 15%. The Infiniti Q60 has added efficiency without compromising power performance through its V6 3.0-liter gasoline, direct-injection turbo engine, which combines high output with fuel economy. The NP300 Navara/Frontier has boosted fuel efficiency some 20% with the replacement of its former 2.5-liter direct-injection turbo diesel engine with a 2.3-liter direct-injection turbo diesel engine.

Nissan's Xtronic transmission (CVT) provides "stepless" gear shifting, enabling the optimal RPM level for the vehicle at any speed. This allows for a balance of smooth, powerful driving and fuel efficiency when accelerating. Nissan employs Xtronic transmission in a wide range of

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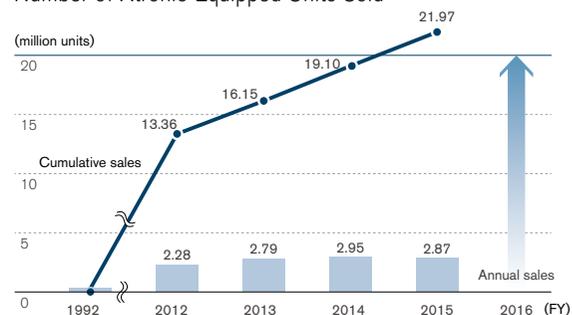
As of time of sale: Maxima, 25 MPG fuel economy combined city/highway driving; NP300 Navara/Frontier (2WD), 6.3L/100km.

vehicles, from "kei" minicars to mid-size cars in the 3.5-liter class. The new-generation Xtronic transmission (for use in cars with 2.0- to 3.5-liter engines) has been installed in products worldwide since 2012. This system's maximum ratio coverage of 7.0, and friction reduction of around 40%, improve fuel efficiency by up to 10% (in-house measurement using U.S. Environmental Protection Agency combined mode).

In fiscal 2015, these technologies helped to give the Maxima and NP300 Navara/Frontier class-leading fuel efficiency at their respective launches in the U.S. and European markets.

Nissan's goal is to ship 20 million Xtronic-equipped vehicles, with their fuel-efficiency benefits, by fiscal 2016 from their first launch in 1992, thereby helping to reduce global CO₂ emissions. Nissan sold 2.87 million Xtronic vehicles in fiscal 2015, bringing the cumulative total to 21.97 million, and achieved our target of 20 million units sold by 2016 one year ahead of schedule.

Number of Xtronic-Equipped Units Sold



A Broader Lineup of Hybrid Vehicles

Hybrid vehicles, which run on a combination of a gasoline-powered engine and an electric motor, offer improvement of fuel efficiency and considerable reductions in CO₂ emissions. Nissan has developed a unique hybrid system using a high-output lithium-ion battery together with a single motor for both drive and regeneration, as well as an Intelligent Dual Clutch Control system in which two clutches are linked in parallel, one to the motor and one directly to the engine and transmission. Vehicles using the system deliver both fuel efficiency and powerful responsiveness. Nissan introduced the system into rear-wheel-drive vehicles in 2010 and front-wheel-drive vehicles in 2013; as of fiscal 2015, it had been expanded to a total of nine models.

The X-Trail Hybrid, launched in 2015, achieves class-leading fuel efficiency through expanded EV driving range and optimization of system operation modes, which make it 25% more fuel efficient than a traditional gasoline-powered vehicle.

As of time of sale: X-Trail, 20.6 km/L.

Progress in Plug-in Hybrid Vehicles

Plug-in hybrid electric vehicles (PHEVs) feature both an internal combustion engine and one or more electric motors, similar to those of electric vehicles, on which they are capable of running. The motors are powered by a small battery pack. The batteries can be charged from an external source or by a generator driven by the engine. Nissan is developing PHEVs with a view to a future launch.

Toward Lighter Vehicles

Vehicle weight reduction makes important contributions to improve fuel efficiency. Nissan is promoting vehicle weight reduction by optimizing vehicle body structure, developing better forming and joining techniques, and substituting materials. For example, to streamline structure, it is reducing component thickness by optimizing layout of support elements. In the manufacturing process, the company is opting for internal component resins that have been foamed to reduce weight.

In the new TITAN XD rolled out in North America in fiscal 2015, engineers achieved a 5 kg weight reduction with increased use of Advanced High Tensile Strength Steel in the frame and a 7 kg reduction by using resin materials in the under-frame cover. The Maxima on sale in fiscal 2015 also saw a 37 kg weight reduction, despite also enjoying a

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25% increase in body rigidity, thanks to an increased proportion of Advanced High Tensile Strength Steel in its overall makeup.

By optimizing the material mixture, Nissan developed its own 1.2 gigapascal (GPa) Ultra High Tensile Strength Steel with High Formability, the world's first such material to combine these levels of tensile strength and workability. In fiscal 2013 this steel was used in the Infiniti Q50 (marketed in Japan as the Skyline), followed by the Murano in North America. Nissan will continue to use 1.2 GPa Ultra High Tensile Strength Steel to create lighter cars with thinner components, reducing the amount of material used while allowing production on the same lines, thereby reducing total costs. The company plans to expand usage of these materials to 25% of all production (measured by vehicle weight) for new vehicles marketed from 2017 onward.

Reducing Congestion and Enhancing Environmental Performance with ITS

An automobile's fuel efficiency depends not just on the car's own capabilities but also on the driving environment and the way it is driven. Nissan is using Intelligent Transport Systems (ITS) and actively working to create infrastructure that will help to improve the traffic environment.

Under commission from Japan's New Energy and Industrial Technology Development Organization (NEDO), Nissan has been working with the Beijing Municipal Commission of Transport since 2010. It is conducting tests with a dynamic route guidance system (DRGS) using IT terminals and eco-driving support to alleviate traffic congestion in the city.

In one experiment, around 12,000 ordinary drivers in Beijing's Wangjing district used Portable Navigation Devices with DRGS and eco-driving support. Results from the experiment, which lasted around one year, showed that DRGS cut travel time by 5.1% and increased fuel economy by 7.6%. Enabling drivers to avoid congested roads led to the dispersion of traffic flow, enhancing overall speed within the area. Furthermore, by helping users cultivate better driving habits, eco-driving support increased fuel economy by 6.8%.

A simulation conducted at the same time calculated that if 10% of all traffic in Beijing used DRGS, travel speed throughout the city would increase by approximately 10%, and both fuel consumption and CO₂ emissions would decrease by approximately 10%.

The Beijing Municipal Commission of Transport presented Nissan

with an award for its major contributions to easing congestion, saving energy and improving the environment in Beijing through this successful project. In an official publication, China's Ministry of Commerce also gave the company a Corporate Leadership Award. Nissan is further developing these activities and conducting research projects aimed at raising air quality using ITS and EVs in cooperation with the Chinese government and universities. The company is working actively to improve urban environments and air quality.



CORPORATE CARBON FOOTPRINT MINIMIZATION

In a world often said to be carbon-constrained, reducing CO₂ emissions is a task to be tackled by all companies. Nissan is improving energy efficiency and promoting renewable energy adoption to reduce CO₂ emissions.

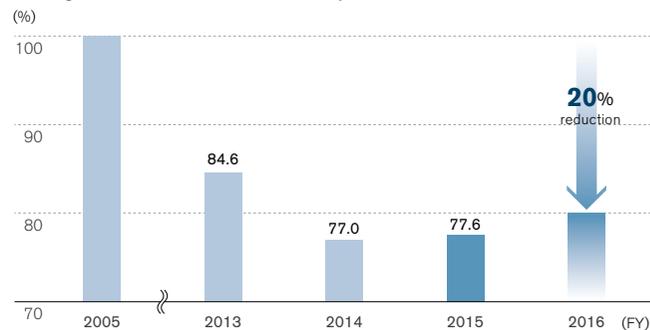
A 20% Emission Reduction in Corporate Activities

By fiscal 2016, Nissan aims to reduce CO₂ emissions associated with its corporate activities by 20% globally from 2005 levels, as measured by the index of CO₂ emissions per vehicle (total emissions generated from Nissan global corporate activities divided by the total Nissan vehicle sales volume). In fiscal 2011, Nissan strengthened its management and broadened the scope of measurable objectives to include logistics, offices and sales companies in addition to production sites. At the same time, the company

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expanded its emission-related initiatives, introducing high-efficiency equipment, energy-saving measures and the use of renewable energy. Nissan met its reduction target in fiscal 2014, and the result in fiscal 2015 was a 22.4% reduction from the fiscal 2005 t-CO₂/vehicle level.

Falling Global Emissions from Corporate Activities



▶ Nissan leased out approximately 350,000 square meters of unused land in Oita Prefecture for solar power generation in May 2013, and the roof of group company Nissan Kohki Co., Ltd.'s Samukawa Plant for the same purpose in January 2014.

To reach CO₂ emission goals, Nissan has set a target of raising the usage rate of renewable energy in its global business activities to 9% by fiscal 2016. Nissan is taking three approaches to increasing the adoption of renewable energy, considering conditions where its production sites are located. These are power generation in company facilities, purchase of power from other companies, and leases of land, facilities and other Nissan assets to power producers.▶

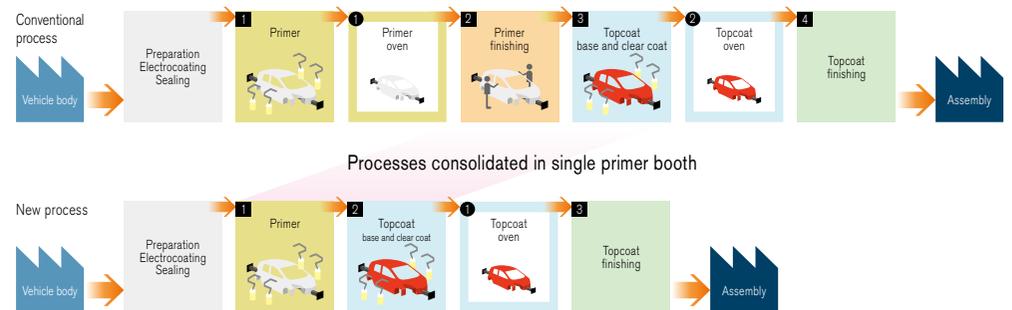
Energy Saving in Global Production

Most CO₂ emissions in the manufacturing process come from the consumption of energy generated by fossil fuels. Nissan engages in a variety of energy-saving activities in the manufacturing process in pursuit of the lowest energy consumption and CO₂ emissions of any automobile manufacturer. In production technology, the company is introducing highly efficient equipment, improving manufacturing techniques and adopting energy-saving lighting. Another key approach is Nissan's three-wet paint process. Approximately 30% of all CO₂ emissions from plants come from the painting process. Shortening or eliminating baking stages within this

process brings about a reduction in emissions.

The three-wet paint process adopted by Nissan removes the need to bake in between the primer layers and the topcoat layers. Instead, layers are applied successively before baking, achieving a reduction in CO₂ emissions of more than 30%, according to Nissan calculations. In 2013, the company introduced this process in Nissan Motor Kyushu Co., Ltd., the Smyrna Plant in the U.S., the second Aguascalientes Plant in Mexico (which started operations in November 2013) and the Resende Plant in Brazil (which started operations in February 2014). At the Kyushu Plant, the company was able to adopt the three-wet process with no shutdown of production lines and successfully shorten total production time.

Three-Wet Paint Process (Combined Primer and Topcoat Application)



• Oven process

Reduces CO₂ emissions by applying primer and topcoat (base coat and clear coat) layers in succession, combining two processes (① and ② in the upper diagram) into one (① in the lower diagram).

To reach the defined objectives for CO₂ emissions and the use of energy, Nissan solicits the necessary facility proposals from each global site, preferentially allocating investment based on the benefit in CO₂ reduction compared to project costs. By making value of carbon one key factor in internal evaluations, Nissan enables more efficient investment and greater competitiveness.

Nissan plants use finely controlled lighting and air conditioning for low-energy use, low-loss operations. The company is promoting CO₂

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emission reduction activities and introducing cutting-edge energy conservation technology from Japan in its plants worldwide. Meanwhile, Nissan plants in all countries learn and share best practices with each other.

In addition, Nissan Energy Saving Collaboration (NESCO) diagnoses energy loss at the plants and proposes new energy-saving countermeasures. These proposals could amount to a potential reduction in CO₂ emissions of 53,754 tons in fiscal 2015, according to Nissan calculations. A NESCO team was established for Japan in 2003, and teams for Europe, Mexico and China in 2013. As a result of these activities, Nissan was awarded the 2016 Energy Conservation Center Japan Chairman's Award. The company also finished second in the manufacturing sector of the 19th Nikkei Environmental Management Survey. It received a perfect score of 100 points in the global warming countermeasures category of the survey, conducted by Nikkei Inc.

By establishing additional cogeneration systems in its Yokohama Plant, Nissan works together to supply the nearby J-Oil Mills Inc. facility with steam through pipes laid down under public roads, thereby maximizing cogeneration efficiency. Using this method, it plans to reduce CO₂ emissions by 5,700 tons per year.

In December 2014, the company began a "partial procurement scheme," sourcing part of the energy used at its plants and other major business locations through Japan's Power Producers & Suppliers (PPS) system, which involves both electric utilities and specified electricity market entrants. Previously each business location selected one major utility company or PPS provider to cover its electricity needs, an approach that allowed selection of a provider with a lower-carbon generation footprint. Facilities like factories, though, with their high demand, generally had to procure electricity from a utility company with proven capacity.

The new partial procurement scheme allows all facilities to secure the stable power supply they need while also reducing related CO₂ emissions and slashing costs at the same time. To date the scheme has been implemented at eight Nissan facilities, including the Nissan Technical Center, Tochigi Plant, Oppama Plant, Yokohama Plant and Zama Operation Center, and at eight partner company locations, including those of Nissan Shatai, Nissan Kohki and Calsonic Kansei.

Renewable energy in the form of 10 wind turbines supplies 6,500 kW, or around 5% of the power used by the Sunderland Plant in the United Kingdom. Solar panels also produce approximately 200 kW at Nissan's plant in Spain. The first Aguascalientes Plant in Mexico uses energy generated from biomass gas and wind power, achieving a renewable energy usage rate of 50% in 2014. In addition, Nissan's Zama Operation Center in Japan is developing small-scale hydropower generators, capable of creating around 0.5 kW of power from a drop of 2.5 meters from drainage pipes, and testing their usage in production plants.

With these activities, Nissan has set a target of reducing CO₂ emissions by 27% below the fiscal 2005 level by fiscal 2016 at all of its production sites, as measured by the index of "CO₂ emissions per vehicle" (total emissions generated from global Nissan vehicle manufacturing sites divided by the total Nissan vehicle production volume). In fiscal 2015, CO₂ emissions per global vehicle were approximately 0.57 tons, a reduction of 22.3% from the fiscal 2005 level.

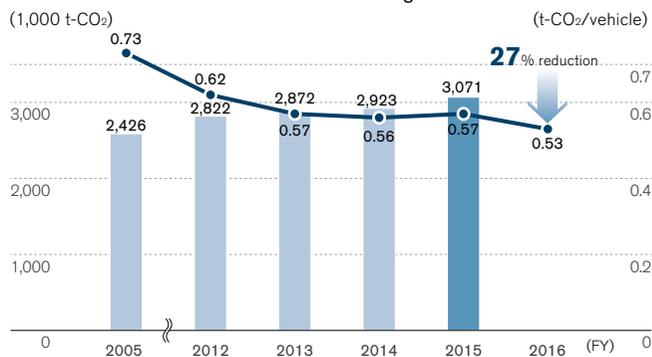
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Global Energy Consumption



* Figures are for the Nissan Group worldwide, including consolidated companies.

Global CO₂ Emissions from Manufacturing Activities



* Figures are for the Nissan Group worldwide, including consolidated companies.

▶▶ page_136

Global energy consumption and CO₂ emissions from manufacturing activities have received third-party certification. For details, please refer to the environmental data at the end of this report.

More Efficient Logistics and Modal Shifts

In 2000, Nissan began sending chartered trucks for pickup and delivery of parts, an uncommon method among automobile manufacturers in Japan at the time. This approach—adopted widely across the company, including at its overseas manufacturing sites—has increased global operational efficiency. Nissan works together with suppliers to optimize the frequency of deliveries and transport routes and to improve packaging specifications for better loading ratios so fewer trucks are required. The company is also actively expanding a modal shift from the use of trucks to rail and maritime transport. Through a 2014 expansion of this approach to include cooperative transport of production parts with other OEMs, in addition to complete vehicles and service parts, the company is targeting further efficiency in this area. The company also reduces transportation distance by sourcing necessary production components for plants from surrounding areas as much as possible.

Nissan engineers devise efficient packaging for the huge number of parts of different shapes and materials that go into automobiles. Through simultaneous-engineering logistics activities, Nissan works from the design stage to create parts and develop new vehicles with consideration for transportation efficiency, as well as to reduce the part shipments per vehicle. The aim is to decrease transport volumes.

In container transport, Nissan has long made use of 40-foot “high cube” containers and runs software-based simulations to reduce wasted container space. As a result of these activities, the container filling rate for parts rose from 89.6% in fiscal 2010 to 94.2% in fiscal 2015.

The company constantly reviews transport methods and is currently undertaking a modal shift to rail and maritime transport. Some 70% of completed vehicles in Japan are now transported by sea. Part shipments from the Kanto area around Tokyo to Nissan Motor Kyushu Co., Ltd. are conducted nearly all by rail and ship. The Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has recognized Nissan as an outstanding enterprise for this modal shift to sea transport.

At Nissan sites outside Japan, transport methods are selected to best match the local geographical conditions. Transport of completed vehicles is increasingly shifting from truck to rail and ship, depending on the destination. In China, the company is increasing the proportion of completed vehicles that are transported domestically by ship or rail.

Since 2010, Nissan has also been promoting the use of energy-

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» website

❖ Click here for more information on Nissan's energy-efficient car carriers.

❖ Total emissions generated from transportation to Nissan manufacturing sites and sales outlets in Japan, North America, Europe and China divided by the total number of vehicles transported.

» Global Headquarters, Sagami-hara Parts Center, Nissan Education Center and Customer Service Center (all in Kanagawa Prefecture).

efficient vessels for sea shipments of its vehicles. By 2015, the fleet had grown to include five energy-efficient car carriers. ❖

While expanding its global logistics operations, Nissan is increasing efficiency and implementing a modal shift in transportation, targeting a 6% reduction in CO₂ emissions by fiscal 2016 from the fiscal 2005 level, as measured by the index of CO₂ emissions per vehicle. ❖ In fiscal 2015, CO₂ emissions per global vehicle were approximately 0.38 tons, a decrease of 10.2% from the fiscal 2005 level.

Our Efforts at Dealerships and Offices

Nissan is promoting CO₂ emission management at all business locations and dealerships in Japan, as well as at bases of operations in North America, Europe and China. It aims to reduce total emissions per floor area by 1% each year.

At business locations in Japan, Nissan is expanding ecological initiatives including digitization of pay slips. Nissan's sales outlets are also continually working to increase energy efficiency: many have adopted high-efficiency air conditioning, insulation films, ceiling fans and LED lighting. During renovation work, some outlets have installed lighting systems that make use of natural daylight and insulated roofs. In addition, Nissan sources clean energy for which CO₂ emissions and costs have been taken into account through Japan's PPS system. In 2015, approximately 150,153 MWh of clean energy was supplied to four Japanese business locations, ❖ including the company's Global Headquarters. Nissan is also broadening supply to dealerships from Nissan and other PPS systems. These systems supply around 930 sales outlets in the Kanto, Chubu, Tohoku, Kansai and Kyushu areas with around 136,366 MWh of energy, equivalent to an annual reduction of some 23,789 tons in CO₂ emissions. The company's NESCO teams have also expanded the scope of their activities beyond production plants to contribute to reducing CO₂ emissions in the Nissan Technical Center.

The company's efforts go beyond CO₂ management. Nissan is pursuing other environmentally friendly policies, such as improving its video and telephone conference facilities and using Microsoft's Office Live Meeting web conferencing service to bring participants in multiple locations together when they need to share documents. This reduces the number of business trips needed worldwide, improves workplace efficiency and reduces costs.



Solar panels are on the roofs of some Kanagawa Nissan dealerships. Power from the panels is supplied to dealerships through the PPS system.

NEW NATURAL RESOURCE USE MINIMIZATION

Nissan is making efforts to use resources more efficiently and to diversify its supplies with renewable resources and recycled materials. The company aims to address the risk of rising costs or depletion of mineral resources caused by growing demand for them and to reduce the environmental impact of their extraction.

Increasing Usage of Recycled Material to 25%

Economic development in emerging countries is rapidly increasing demand for mineral and fossil resources. Some forecast that all currently known mineral resources will have been extracted by 2050 if present trends continue. Some mining sites currently in operation and new exploration sites are located in areas where local ecosystems need to be preserved, and there is concern about the environmental effects of topsoil excavation, deforestation and wastewater.

To address these issues, Nissan is taking measures to minimize the volume of newly extracted natural resources. As well as using resources more efficiently, it is increasing the proportion of renewable resources and recycled materials and increasing diversification. The company's recycling efforts are based on the policy that once a natural resource is extracted, it should continue to be used, while maintaining quality, to minimize environmental impact. Nissan has set a target of increasing the recycled

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material usage ratio per new vehicle for which production begins in fiscal 2016 by 25% in Japan, the United States and Europe. In the long term, through promotion of activities, the company aims to maintain the total volume of new natural resource usage at the 2010 level.

Nissan's Closed-Loop Recycling System

Closed-loop recycling is a way of recycling waste generated during vehicle production and scrap from end-of-life parts into recycled material that has equal quality as new resources, using it as material in the same type of products. With this method, the same material can be used repeatedly, thus greatly reducing CO₂ emissions and the environmental impact over the product lifecycle. The company is focusing its efforts on closed-loop recycling of steel, aluminum and plastic. These materials, which account for a large proportion of the content of a vehicle, have a major environmental impact when they are extracted and require a large amount of energy for production and disposal.

Nissan is working to reduce the steel and aluminum scrap left over in the manufacturing process. The company is also working globally with business partners to collect and reuse this scrap as material for new vehicles. To further reduce natural resource usage, it uses electric-furnace sheet steel made from steel scraps in the Rogue, the Murano and other vehicles produced in North America. End-of-life aluminum wheel rims are also collected for recycling in the form of new wheels or chassis components. In fiscal 2015, Nissan collected about 2,770 tons of wheel rims.

In Japan, Nissan is collecting plastic in the form of finished bumper scrap generated at its plants and turning it into recycled plastics in a finished bumper reprocessing line set up in the Oppama Plant. Recycled plastics have already been given new life as bumpers in the Nissan LEAF and many other new vehicles. This initiative has been expanded to Nissan's joint venture in China, Dongfeng Motor Company Ltd., and in 2014 to production of replacement bumpers.

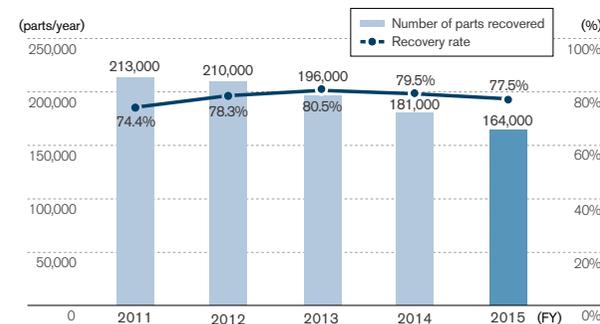
Exchanged bumpers collected from dealerships are being recycled as materials under covers and for other components. By enhancing its bumper return scheme, in fiscal 2015, Nissan collected and recycled about 164,000 pieces of bumpers, representing 77.5% of bumpers removed at Japanese dealerships.

Nissan's copper usage has also been rising due to the recent increased sales of hybrid vehicles and EVs. The company has begun using scrap left over from manufacturing as an additive during foundry processing.

Closed-Loop Recycling



Recovered Bumpers



Recyclability Rate and Recovery Rate

Nissan considers the three Rs—reduce, reuse and recycle—starting with the design stage for new vehicles. It takes into account the whole lifecycle when designing and developing vehicles, ensuring the ease of dismantling and recycling after they are scrapped. Since fiscal 2005, all new models launched in the Japanese and European markets have achieved a 95% or greater recyclability rate. ▶

▶ Calculated based on 1998 Japan Automobile Manufacturers Association definition and calculation guidelines (in Japan) and ISO 22628 (in Europe).

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Nissan also carries out experimental studies to optimize processing and improve the recovery rate for end-of-life vehicles (ELVs). The studies first aimed to establish methods for processing waste oil, waste liquids, lead and other substances that impact the environment and now focus on reuse of valuable materials. Feedback from the studies has led to improvements in dismantling techniques and has aided the company's product design division in choosing suitable materials and designing vehicles that are easier to dismantle. Nissan calculates that the recovery rate for its ELVs in Japan has consistently been 95% or greater since fiscal 2006; the recovery rate for fiscal 2015 was 99.6%.

Reducing Scarce Resource Usage

Hybrid vehicles and electric vehicles (EVs) emit less CO₂ over the lifecycle of the product than gasoline-powered vehicles, but scarce resources called rare earths are a necessary component of their motors. Uneven distribution of rare earth elements and the forces of demand and supply give rise to concern about price changes, making it important to reduce their usage.

In 2012, Nissan developed a new electric motor that requires 40% less dysprosium (Dy) compared to conventional EV motors. This motor is currently used in the Nissan LEAF. Nissan is successively installing the reduced-Dy motor in its hybrid vehicles, including the X-Trail Hybrid in 2015. The company is conducting technical research on further reductions and has the ultimate goal of achieving zero usage of Dy in other components as well.

Nissan aims to reduce and optimize the usage of other rare earth elements. The plan is to reduce annual use of rare earth elements by 30% by fiscal 2016 compared to the projected usage if no particular countermeasures had been implemented from fiscal 2011 onward.

Thorough Measures for Waste Materials

Nissan actively promotes measures based on the three Rs in its production processes whenever possible, striving to minimize the waste generated and maximize recycling efficiency by thoroughly sorting waste. Efforts have paid off. Since fiscal 2010 the company in Japan has achieved a 100%-recovery rate at all of its production sites, including five manufacturing plants, two operations centers and five affiliates. In Mexico, the first Aguascalientes Plant achieved this in 2011. Nissan is working to bring this rate to an industry-leading level in each global region.

Nissan has been making great efforts to reduce the number of wooden pallets and cardboard boxes used in import and export parts shipping. The company began replacing them with units made from steel more than 30 years ago, rolling out plastic substitutes more than 20 years ago. These are foldable and can be returned for reuse. Nissan has also been working with its Alliance partner Renault to expand use of globally standardized, returnable containers. Through design activities carried out concurrently with logistics operations, Nissan has recently been considering ways to optimize the shape of parts from the development stage, thus helping to reduce the packaging materials required.

Through these efforts, Nissan plans to reduce the amount of waste from its production factories by 2% annually in Japan and by 1% annually worldwide compared to waste levels expected if no special steps had been taken from fiscal 2011 onward.

Sales of Nissan Green Parts

Parts with the potential for recycling include those reclaimed from ELVs, as well as those replaced during repairs. In Japan, Nissan collects and thoroughly checks the quality of these secondhand parts. Those that receive a passing grade are sold through its sales outlets as Nissan Green Parts. Nissan sells these parts in two categories: reusable parts, which are cleaned and tested for quality before sale, and rebuilt parts, which are disassembled and have components replaced as needed.

▶▶ [page_120](#)

▶ For details, refer to the environmental data at the end of this report.

▶▶ [website](#)

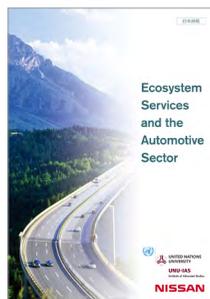
Click here for more information on Nissan Green Parts.

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PROTECTING THE AIR, WATER, SOIL AND BIODIVERSITY

The United Nations Millennium Ecosystem Assessment report issued in 2005 concluded that ecosystem services evaluated had degraded over the past 50 years. Many scientists believe that humans have changed the Earth's ecosystems more rapidly and extensively than in any comparable period in history. Humankind depends on a number of ecosystem services, including provision of food and fresh water, climate regulation and protection from natural disasters. The automotive industry must recognize both its impact on ecosystems and its dependence on these services. Companies today face the pressing need to balance environmental preservation and economic progress as they pursue their business activities.

Using methods identified in the Corporate Ecosystem Services Review, ^{x1} Nissan has evaluated its value chain from the extraction of material resources to vehicle production and operation. Based on the results, the company has identified its three priority areas as an automobile manufacturer: energy sourcing, mineral material sourcing and water usage. Nissan has followed up by positioning the business risks and opportunities and re-evaluating and further developing its traditional environmental initiatives. In 2010, Nissan published "Ecosystem Services and the Automotive Sector," ^{x2} a report collating the outcome of this work. Company calculations in June 2013 showed that more than 20 times as much water was used upstream in the supply chain than by Nissan itself.



^{x1} Developed by the World Resources Institute in cooperation with the World Business Council for Sustainable Development and Meridian Institute, based on the U.N. Millennium Ecosystem Assessment.

► website

^{x2} Click here for more information on "Ecosystem Services and the Automotive Sector."

Cleaner Exhaust Emissions

Nissan proactively sets strict environmental goals and targets as it pursues development of cleaner combustion technologies, catalysts for purifying emissions and other solutions. The ultimate goal is for automotive emissions to be as clean as the atmosphere. The company introduces vehicles that meet emission regulations in each country in a timely manner. Nissan aims to reduce the environmental impact of society as a whole by offering vehicles with highly efficient, cutting-edge emission-reduction technologies at reasonable prices. ^{x1}

Nissan's Sentra CA, released in the United States in January 2000, ^{x2} was the first gasoline-powered vehicle in the world to receive Partial Zero Emissions Vehicle (PZEV) certification, ^{x3} in compliance with the emission requirements of the California Air Resources Board.

The Bluebird Sylphy, released in Japan in August 2000, became the first vehicle to gain certification from the Ministry of Transport (now the Ministry of Land, Infrastructure, Transport and Tourism) as an Ultra-Low Emission Vehicle (U-LEV). ^{x4} In addition, this model became Japan's first vehicle to receive Super Ultra-Low Emission Vehicle (SU-LEV) certification ^{x5} in 2003.

Later, the X-Trail 20GT was the first vehicle in the world to meet Japan's 2009 Emission Regulations, among the most stringent in the world; it was launched in 2008, the year before the regulations came into effect. ^{x6} The X-Trail 20GT carries a diesel filter that traps and eliminates particulate matter, NOx absorption and oxidation catalysts and an M9R clean diesel engine developed through the Renault-Nissan Alliance. The company has thus overcome the difficult challenges of making diesel vehicle exhaust cleaner, achieving both energy efficiency and reduced CO₂ emissions. An X-Trail 20GT with a 6-speed automatic transmission (including manual mode) was introduced in 2010.

Furthermore, Nissan is working to improve air quality through the use of Intelligent Transport Systems (ITS) that tackle traffic congestion and other urban environmental issues. ^{x7}

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^{x7} Click here for more information on Nissan's ITS initiatives.

^{x6} The 2009 emission standards stipulate reductions of NOx by 47% and particulate matter by 64% from the levels required by the 2005 emission standards (applicable to vehicles weighing more than 1,265 kg). The regulations went into effect for new models in October 2009 and have been applied to existing models and imported cars since September 2010.

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^{x1} Click here for more information on how Nissan is meeting emission regulations in different countries. For more details, see the CSR data section in this report.

^{x2} This vehicle is no longer produced.

^{x3} PZEV vehicles must meet requirements in the areas of Super Ultra-Low Emission Vehicle tailpipe emission level and zero-evaporative emissions, be equipped with an onboard diagnostic system and have an extended warranty of 150,000 miles or 15 years.

^{x4} U-LEV: Ultra-Low Emission Vehicles produce 75% less nitrogen oxide (NOx) and nonmethane hydrocarbon (NMHC) than the 2000 emission standards level.

^{x5} SU-LEV: Super Ultra-Low Emission Vehicles produce 75% less emissions than the 2005 emission standards level.

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Plant Emission Management

Nissan thoroughly implements systems and control standards at its production plants to reduce the amount of air pollutants emitted during operations. The company's own air pollution control targets are more stringent than those mandated by the countries in which it operates.

In Japan, Nissan has taken strict measures for emissions of NOx and SOx pollutants from its factories, reducing the amount of these emissions to one quarter of the levels emitted in the 1970s. Painting lines and other processes in vehicle production consume large amounts of heat. Nissan has lowered NOx and SOx emissions by introducing low-NOx burners in the ovens and boilers that provide heat for painting lines and by switching from heavy oil and kerosene to fuels with low SOx emissions for these ovens and boilers.

A current challenge is the reduction of volatile organic compounds (VOCs), which readily evaporate and become gaseous in the atmosphere. These compounds account for approximately 90% of the chemicals released in Nissan's vehicle production processes. The company is working to increase the recovery of cleaning solvents and other chemicals and to reduce the amounts of these substances emitted from its plants ahead of implementation of new regulations in each country where it operates.

Nissan is also introducing water-based paint lines that limit VOC emissions to less than 20 grams per square meter of painted surface. The company has adopted these lines in the Nissan Motor Kyushu Co., Ltd. Plant as well as at two plants in Aguascalientes in Mexico, the Resende Plant in Brazil, the Smyrna Plant in the United States, and the Huadu Plant in China. Nissan has set a target for fiscal 2016 of a 15% reduction in VOC emissions by painted surface area from fiscal 2010 levels.

Nissan's Tough Voluntary Standards

Stricter controls on environment-impacting substances are being implemented in countries around the world. Examples include the European ELV Directive, the European Union's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation, which went into force in June 2007, and Japan's Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, Etc. To help minimize the potential release of formaldehyde, toluene and other VOCs in vehicle cabins, the Japan Automobile Manufacturers Association has launched a voluntary program that calls for all new models launched in Japan from April 2007 to meet

standards set by the Japanese Ministry of Health, Labor and Welfare for concentration levels of 13 compounds in vehicle interiors.

Nissan is strengthening its management of environment-impacting substances, adhering to a well-planned schedule for their reduction and advancing the use of alternative substances. In 2005, the company drew up policies regarding the use of substances scientifically recognized as being hazardous or carrying high hazard risks, as well as those identified by NGOs as dangerous. In 2007, these policies, which restrict environment-impacting substances even more than the domestic laws of the countries where it operates, were rolled out globally.

Based on these policies, the company has developed the Nissan Engineering Standard (NES) for the "Restricted Use of Substances." The standards identify the chemical substances whose use is either prohibited or controlled. Nissan applies them in selecting all materials, components and parts used in its vehicles from initial development onward. For example, four heavy metal compounds (mercury, lead, cadmium and hexavalent chromium) and the polybrominated diphenyl ether (PBDE) flame retardant have been either prohibited or restricted in new type models (excluding OEM vehicles) launched globally since July 2007. To control VOC use in car interiors, Nissan has adopted the voluntary targets of the Japan Automobile Manufacturers Association as its own standards for global operations and is reviewing and reducing their use in materials and adhesives for seats, door trim, floor carpet and other parts.

Every year, Nissan revises the "Restricted Use of Substances" NES to reflect changes in international laws and regulations and to add new substances covered by its voluntary standards. This NES incorporates banned and restricted substances as defined in the Global Automotive Declarable Substances List (GADSL), prepared by a global team made up of auto manufacturers, parts suppliers and materials manufacturers.

Together with suppliers, Nissan builds and maintains communication and management systems internally and within its supply chain. For example, the company discloses information and is registered with and submits REACH reports to the relevant authorities about the vehicles and parts produced in or imported to Europe from Japan and other countries (including some from the United States). The company also complies with Classification, Labeling and Packaging of Substances and Mixtures (CLP) regulations.

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Water-Use Management

As the global population grows, water use increases and water scarcity becomes a more serious problem. Climate change also has the potential to bring about reductions in glacial water resources and changes in precipitation patterns, further driving the need for water usage reduction.

Plants producing Nissan vehicles and parts are located all over the world, and they all use water as part of the production process. The company is making efforts to manage and reduce water usage at all of its production plants. It plans to achieve a 15% reduction from fiscal 2010 levels in water usage per vehicle produced by fiscal 2016. To achieve this, Nissan has built a reservoir for rainwater at the Chennai Plant in India and has installed wastewater recycling equipment at the Chennai Plant, the Huadu Plant in China, and the Oppama Plant in Japan. The company is implementing best practices globally to reduce water usage.

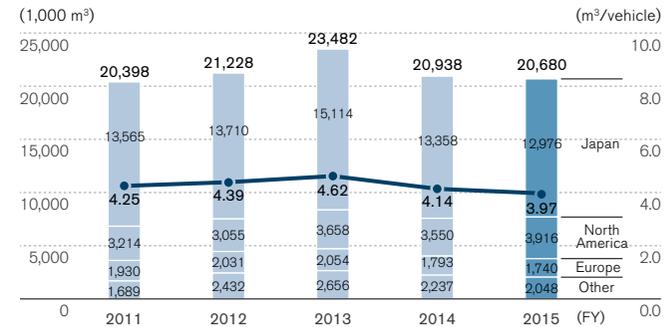
Nissan is also working to reduce water usage at its Global Headquarters by processing rainwater and wastewater from kitchens and other sources to use for flushing toilets and watering some plants.

Cleaner Effluent Through Wastewater Treatment

Nissan thoroughly processes wastewater at its various plants. Wastewater from the company's two plants in Aguascalientes, Mexico, is used to maintain greenery on the sites, with no offsite discharge.

Nissan is also strengthening water pollution measures in its Japanese plants. In preparation for unexpected occurrences, such as the discharge of oil, it has attached water quality sensors to the discharge ports of wastewater treatment facilities. Discharge of water outside the grounds is automatically suspended if water quality problems are detected.

Wastewater Release



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▶ For more details, see the CSR data section in this report.